IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 10/743,616

Filed: December 22, 2003

For: A PERFORMANCE MANAGEMENT PLATFORM

Group Art Unit: 3693

Examiner: Jennifer Liversedge

Supplemental Brief on Appeal

Commissioner of Patents
Washington, D.C. 20321

Sir or Madam:

The Appellant respectfully appeals the rejection of claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 and claim 96 in the February 11, 2008 Office Action for the above referenced application. This supplemental appeal brief was prepared in order to identify the means plus function claims and correct other clerical errors.

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1. Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.) is the assignee of 100% interest in the above referenced patent application.

2. Related appeals

An Appeal for U.S. Patent Application 09/764,068 filed on January 19, 2001 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 10/645,099 filed on August 21, 2003 may be affected by or have a bearing on this appeal. An appeal for U.S. Patent Application 10/746,673 filed December 24, 2003 may be affected or have a bearing on this appeal.

3. Status of Claims

Claims 75 - 96 are rejected and are the subject of this appeal. Claims 64 – 74 are rejected, they are not included in the appeal as claim 64 was amended. Claims 1 - 63 are cancelled without prejudice.

4. Status of Amendments

An amendment submitted on June 11, 2008 was not entered by the Examiner.

5. Summary of Claimed Subject Matter

One embodiment of a performance management platform for a commercial enterprise according to the present invention is best depicted in Figures 1 through 9 of the specification. Figure 1 gives an overview of the major processing steps which include establishing system settings and preparing data for use in analysis, analyzing the data to quantify value for the enterprise by element and segment of value and optionally completing a series of analyses and activities including report production.

Independent Claim 75 - A first embodiment of the performance management platform is exemplified in independent, means plus function claim 75 where a computer readable media directs a computer system (100) to transform data from organization databases, external databases and the Internet into an integrated database and use part of the data from the database to develop a model that identifies a net contribution of one or more elements of value to an organization value by a segment of value. The model is then used by the computer system (100) to support a variety of activities including: determining an element of value

contribution to value, quantifying an element of value impact on enterprise financial performance, completing an analysis of enterprise financial performance, optimizing one or more aspects of enterprise financial performance, simulating an enterprise financial performance, optimizing a future enterprise market value, quantifying a future enterprise market value, creating a management report, valuing an enterprise market sentiment, calculating a real option discount rate, valuing a real option, valuing a share of enterprise stock and determining a target share price.

The computer system (100) is described in FIG. 3, reference numbers 100, 110 – 118, 120 – 128 and 130 – 138 and line 1, page 10 through line 23, page 11 of the specification. The first stage of performance management platform processing (200) begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 29, page 23; through line 25, page 25. The metadata mapping and conversion information that will be used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 27, page 25 through line 28, page 26 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 5, page 27 through line 14, page 28 of the specification. The extraction, conversion and storage of data from an operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 21, page 28 through line 17, page 29 of the specification. The extraction, conversion and storage of data from a web site system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 209 and 211 and line 18, page 29 through line 12, page 30 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 226, 209 and 211 and line 14, page 30 through line 8, page 31 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 16, page 31 through line 13, page 32 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described

in FIG 5C, reference numbers 245, 209 and 211 and line 15, page 32 through line 8, page 33 of the specification. The extraction, conversion and storage of data from asset management systems in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 246, 209 and 211 and line 10, page 33 through line 5, page 34 of the specification. The extraction, conversion and storage of data from supply chain systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 252, 209 and 211 and line 12, page 34 through line 6, page 35 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 257, 258 and 259 and line 24, page 35 through line 5, page 37 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 255 and line 10, page 35 and line 18, page 35 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG 5E, reference numbers 263, 258 and 259, FIG. 5E, reference numbers 265, 266, 267 and 268 and line 7, page 37 through line 11, page 40 of the specification. The stored data are then processed to identify and locate missing data, as described in FIG. 5F reference numbers 281 and 282 and line 21, page 41 through line 6, page 42 of the specification.

After data are aggregated, converted and stored as described in the preceding paragraphs, item performance indicators and composite variables are generated and the segments and components of value are specified using the procedure described in FIG. 5F, reference numbers 283, 284, 285, 286, 287 and 288 and line 7, page 42 through line 23, page 44 of the specification. The database is then checked to determine if derivative values are present for all required periods and values are calculated for derivatives and periods that are missing values as described in FIG. 5G., reference numbers 291 and 292 and line 25, page 44 through line 3, page 45 of the specification.

In the second stage of performance management platform processing (300), the item performance indicators and composite variables are then used to develop models of the segments of value creating value for the organization. The models may include the current operation segment of value by component of value (revenue, expense or capital change), the real option segment of value, the derivative segment of value, the excess financial asset segment of value and the market sentiment segment of value. In the first phase of this processing, the item performance indicators and composite variables created in the prior stage of processing are used to develop a summary of element of value contribution to each of the

components of current operation value (revenue, expense or capital change) for each enterprise. As part of this processing the causal item performance indicators and composite variables (collectively, causal factors) are identified and are used exclusively in building the vectors that summarize the performance of each element of value and external factor. This phase of processing is described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. As part of the processing in this stage, the strength of the different elements of value used to support a real option is compared using DEA analysis to the strength of the same elements of value controlled by competitors. The results of the analysis are used to estimate an increase in the cost of capital for real options. The estimate is then combined with the enterprise cost of capital (determined in a manner that is well known) to develop a discount rate for each real option. The discount rate is combined with previously stored information regarding each real option in order to calculate the value of the real options. This phase of processing is described in FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification. A model of the contribution of elements of value to derivative value, excess financial asset value and market sentiment value is also developed in this stage of processing. A series of predictive models are then used to identify the relationship between the item performance indicators and composite variables identified in the first phase of this processing with the derivative value, excess financial asset value and market sentiment value. The relationships from the best fit model are then used to calculate the contribution of each element of value to derivative value, excess financial asset value and market sentiment value in a manner similar to that used for identifying element of value contribution to the components of value. This phase of processing is described in FIG. 6C reference numbers 341, 342, 352 and 353, and line 30, page 67 through line 18, page 78 of the specification.

In the third and final stage (400) of performance management platform processing, the models of element of value contribution to the five segments of value are used to create reports and complete analyses selected by the user. This portion of the processing is described in FIG. 7 reference numbers 402, 403, 405, 408, 410, 411 and 415 and line 20, page 78 through line 28, page 81 of the specification. Cross referenced patent 5,615,109 describes a number of methods of performing optimization analyses without simulation that may also be used.

The limitations associated with Markush group for this claim are described in a number of places. As described in FIG. 7 reference numbers 402, 403, 405, 408, 410, 411 and 415 and

line 20, page 78 through line 28, page 81 of the specification, the user is free to specify different types of analyses and request the completion of different types of optimization analyses. The process for determining an element of value contribution is described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. The steps for quantifying an element of value impact are described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. The analysis, simulation and optimization of one or more aspects of enterprise financial performance including future market value is described in FIG. 7, reference numbers 405, 406, 408 and 410 and line 18, page 79 through line 12, page 81 of the specification. Cross referenced patent 5,615,109 also describes a number of methods of performing optimization analyses that may be selected. The creation of management reports is described in FIG. 7, reference number 403, 410 and 411 and line 7, page 79 through line 21, page 81 of the specification. The process for valuing market sentiment is described in Table 45 on page 76. The process for calculating a real option discount rate and the valuation of real options is described in FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification. The valuation of a share of enterprise stock and the determination of a target share price is described in FIG. 8 reference number 510 and 512 and line 25, page 69 through line 15, page 70 of cross referenced application 09/940,450 and FIG. 7 reference number 403, 405, 408 and 410 and line 7, page 79 through line 20, page 81 of the specification.

Dependent claims

The limitations associated with dependent claim 76 are described in a number of places including FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification.

The limitations associated with dependent claim 77 are described in a number of places including line 27, page 8 through line 33, page 8 of the specification.

The limitations associated with dependent claim 78 are described in a number of places including FIG. 5A, FIG. 5B and FIG. 5C and line 29, page 23; through line 11, page 40 of the specification.

The limitations associated with dependent claim 79 are described in a number of places including FIG. 5G reference number 293, FIG. 7, reference number 405, line 4, page 45 through

line 10, page 45 and line 10, page 58, through line 33, page 58 of the specification.

The limitations and activities associated with dependent claim 80 are described in a number of places including FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification.

The limitations associated with dependent claim 81 are described in a number of places including FIG. 6A reference number 309 and line 2, page 53 through line 9, page 53 of the specification.

The limitations associated with dependent claim 82 are described in a number of places including line 6, page 8 through line 33, page 8 of the specification.

The limitations associated with dependent claim 83 are described in a number of places including FIG. 5G, reference number 293 and line 4, page 45 through line 11, page 45 of the specification.

The limitations associated with dependent claim 84 are described in a number of places including Table 25, page 53, FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification.

The limitations and activities associated with dependent claim 85 are described in a number of places including FIG. 7, reference number 408 and line 16, page 80 through line through line 2, page 81 of the specification. Multi criteria optimization was mentioned in the originally filed claims and is also discussed in cross referenced patent 5,615,109.

Independent Claim 86 - A second embodiment of the performance management platform is exemplified in independent, means plus function claim 86 where a computer system (100) transforms data from organization transaction databases, external databases and the Internet into an integrated database and uses part of the data from the database to develop a model that identifies a net contribution of one or more elements of value to an organization value by a segment of value.

The computer system (100) is described in FIG. 3, reference numbers 100, 110 – 118, 120 – 128 and 130 – 138 and line 1, page 10 through line 23, page 11 of the specification. The first stage of performance management platform processing (200) begins by defining the enterprise using the system settings table as described in FIG. 5A reference number 202 and line 29, page 23; through line 25, page 25. The metadata mapping and conversion information that will be

used to guide the extraction of data from each database is then established as described in FIG. 5A reference numbers 203 and line 27, page 25 through line 28, page 26 of the specification. After the metadata mapping and conversion information is established for each database, data from each database are extracted converted and stored in the application database for use in analysis. The extraction, conversion and storage of data from the basic financial system database in accordance with the established metadata mapping specification is described in FIG 5A, reference numbers 207, 208, 209 and 211 and line 5, page 27 through line 14, page 28 of the specification. The extraction, conversion and storage of data from an operation management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 221, 222, 209 and 211 and line 21, page 28 through line 17, page 29 of the specification. The extraction, conversion and storage of data from a web site system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 225, 209 and 211 and line 18, page 29 through line 12, page 30 of the specification. The extraction, conversion and storage of data from a human resource management system in accordance with the established metadata mapping specification is described in FIG 5B, reference numbers 226, 209 and 211 and line 14, page 30 through line 8, page 31 of the specification. The extraction, conversion and storage of data from external databases in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 241, 242, 209 and 211 and line 16, page 31 through line 13, page 32 of the specification. The extraction, conversion and storage of data from an advanced finance system in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 245, 209 and 211 and line 15, page 32 through line 8, page 33 of the specification. The extraction, conversion and storage of data from asset management systems in accordance with the established metadata mapping specification is described in FIG 5C, reference numbers 246, 209 and 211 and line 10, page 33 through line 5, page 34 of the specification. The extraction, conversion and storage of data from supply chain systems in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 252, 209 and 211 and line 12, page 34 through line 6, page 35 of the specification. The extraction, conversion and storage of data from the internet in accordance with the established metadata mapping specification is described in FIG 5D, reference numbers 257, 258 and 259 and line 24, page 35 through line 5, page 37 of the specification. Internet data are obtained after the user (20) establishes keywords as described in FIG. 5D, reference number 255 and line 10, page 35 and line 18, page 35 of the specification. Text data and geospatial measures are extracted and stored in the integrated database as described in FIG

5E, reference numbers 263, 258 and 259, FIG. 5E, reference numbers 265, 266, 267 and 268 and line 7, page 37 through line 11, page 40 of the specification. The stored data are then processed to identify and locate missing data, as described in FIG. 5F reference numbers 281 and 282 and line 21, page 41 through line 6, page 42 of the specification.

After data are aggregated, converted and stored as described in the preceding paragraphs, item performance indicators and composite variables are generated and the segments and components of value are specified using the procedure described in FIG. 5F, reference numbers 283, 284, 285, 286, 287 and 288 and line 7, page 42 through line 23, page 44 of the specification. The database is then checked to determine if derivative values are present for all required periods and values are calculated for derivatives and periods that are missing values as described in FIG. 5G., reference numbers 291 and 292 and line 25, page 44 through line 3, page 45 of the specification.

In the second stage of performance management platform processing (300), the item performance indicators and composite variables are then used to develop models of the segments of value creating value for the organization. The models may include current operation segment of value by component of value (revenue, expense or capital change), the real option segment of value, the derivative segment of value, the excess financial asset segment of value and the market sentiment segment of value. In the first phase of this processing, the item performance indicators and composite variables created in the prior stage of processing are used to develop a summary of element of value contribution to each of the components of current operation value (revenue, expense or capital change) for each enterprise. As part of this processing the causal item performance indicators and composite variables (collectively, causal factors) are identified and are used exclusively in building the vectors that summarize the performance of each element of value and external factor. This phase of processing is described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. As part of the processing in this stage, the strength of the different elements of value used to support a real option is compared using DEA analysis to the strength of the same elements of value controlled by competitors. The results of the analysis are used to estimate an increase in the cost of capital for real options. The estimate is then combined with the enterprise cost of capital (determined in a manner that is well known) to develop a discount rate for each real option. The discount rate is combined with previously stored information regarding each real option in order to calculate the value of the

real options. This phase of processing is described in FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification. A model of the contribution of elements of value to derivative value, excess financial asset value and market sentiment value is also developed in this stage of processing. A series of predictive models are then used to identify the relationship between the item performance indicators and composite variables identified in the first phase of this processing with the derivative value, excess financial asset value and market sentiment value. The relationships from the best fit model are then used to calculate the contribution of each element of value to derivative value, excess financial asset value and market sentiment value in a manner similar to that used for identifying element of value contribution to the components of value. This phase of processing is described in FIG. 6C reference numbers 341, 342, 352 and 353, and line 30, page 67 through line 18, page 78 of the specification.

In the third and final stage (400) of performance management platform processing, the models of element of value contribution to the five segments of value are used to create reports and complete analyses. This portion of the processing is described in FIG. 7 reference numbers 402, 403, 405, 408, 410, 411 and 415 and line 20, page 78 through line 28, page 81 of the specification. Cross referenced patent 5,615,109 describes a number of methods for performing optimization analyses that may also be used.

Dependent claims

The limitations associated with dependent claim 87 are described in a number of places. As described in FIG. 7 reference numbers 402, 403, 405, 408, 410, 411 and 415 and line 20, page 78 through line 28, page 81 of the specification, the user is free to specify different types of analyses and request the completion of different types of optimization analyses. The process for determining an element of value contribution is described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. The steps for quantifying an element of value impact are described in FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification. The analysis, simulation and optimization of one or more aspects of enterprise financial performance including future market value is described in FIG. 7, reference numbers 405, 406, 408 and 410 and line 18, page 79 through line 12, page 81 of the specification. Cross referenced patent 5,615,109 also describes a number of methods of performing optimization analyses that may be selected. The creation of

management reports is described in FIG. 7, reference number 403, 410 and 411 and line 7, page 79 through line 21, page 81 of the specification. The process for valuing market sentiment is described in Table 45 on page 76. The process for calculating a real option discount rate and the valuation of real options is described in FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification. The valuation of a share of enterprise stock and the determination of a target share price is described in FIG. 8 reference number 510 and 512 and line 25, page 69 through line 15, page 70 of cross referenced application 09/940,450 and FIG. 7 reference number 403, 405, 408 and 410 and line 7, page 79 through line 20, page 81 of the specification.

The limitations associated with dependent claim 88 are described in a number of places including line 27, page 8 through line 33, page 8 of the specification.

The limitations associated with dependent claim 89 are described in a number of places including FIG. 5A, FIG. 5B and FIG. 5C and line 29, page 23; through line 11, page 40 of the specification.

The limitations associated with dependent claim 90 are described in a number of places including FIG. 5G reference number 293, FIG. 7, reference number 405, line 4, page 45 through line 10, page 45 and line 10, page 58, through line 33, page 58 of the specification.

The limitations associated with dependent claim 91 are described in a number of places including FIG. 6A reference numbers 301 - 314, FIG. 6B reference numbers 321 – 332, FIG. 6C reference numbers 341 – 343 and 348 - 353 and line 18, page 46 through line 18, page 78 of the specification.

The limitations associated with dependent claim 92 are described in a number of places including FIG. 6A reference number 309 and line 2, page 53 through line 9, page 53 of the specification.

The limitations associated with dependent claim 93 are described in a number of places including line 6, page 8 through line 33, page 8 of the specification.

The limitations associated with dependent claim 94 are described in a number of places including FIG. 5G, reference number 293 and line 4, page 45 through line 11, page 45 of the specification.

The limitations associated with dependent claim 95 are described in a number of places including Table 25, page 53, FIG. 6B reference numbers 331 and line 23, page 64 through line 16, page 66 of the specification.

The limitations associated with dependent claim 96 are described in a number of places including FIG. 7, reference number 408 and line 16, page 80 through line through line 2, page 81 of the specification. Multi criteria optimization was mentioned in the originally filed claims and is also discussed in cross referenced patent 5,615,109.

As detailed in the summary of claimed subject matter and the specification, the method summarized above automatically makes adjustments to the user supplied schema as required to produce accurate impact measures and valuations for the elements of value.

The table shown below provides an overview of the processing steps that are used to develop the market sentiment, derivative, excess financial asset and component of current operation value models.

10/743,616 priority to 2001	Excerpt from 7,283,982 filed in 2003
1. Transform raw data into indicators using pre-programmed functions and Linus/AQ algorithms	1. Use any technique to derive a basic model
2. Develop an initial model using the raw and transformed data as inputs by: a) creating parallel models using different specified algorithms, and b) using **stepwise regression** to identify the best set of input variables	2. Develop an initial model by: a) deriving features from the input to the basic model using any current transform regression algorithm, and b) using **stepwise regression** to select the input features for the initial regression model
3. Refine the variable selection from 2b) and then transform the resulting set of input variables into summaries using different specified algorithms.	3. Complete a non-linear transformation of an explanatory input feature(s) from the initial model.
4. Determine if clustering improves model accuracy.	4. Use the transformed input features to create a new linear regression model
5. Use the best summary of transformed data from step 3 to create a final regression model with or without clustering depending on the results from step 4.	5. Combine the output of the new linear regression model with the output of the initial model and use the sum to provide a final model for the current iteration
	6. Repeat steps 2 through 5 indefinitely

6. Grounds of rejection to be reviewed on appeal

Issue 1 – Whether claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are patentable under 35 USC §103(a) over "Premium Drivers of Post Deal Value" in Mergers and Acquisitions (hereinafter, Bielinski) in view of "Outdated corporate reporting practices fail to measure companies' true value" in M2 Presswire (hereinafter, M2) and further in view of "Finance and economics: shining a light on company accounts" in the Economist (hereinafter, Economist)?

Issue 2 - Whether Claims 76 is patentable under 35 USC §103(a) over Bielinski, M2, Economist and "The use of options theory to value research in the service sector" by K Jensen and P. Warren (hereinafter referred to as Jensen)?

Issue 3 - Whether claim 81, claim 85, claim 92 and claim 96 are patentable under 35 USC §103(a) over Bielinski, M2 and Economist in view of "Machine Learning Research – Four Current Directions" by Thomas Diettrich (hereinafter Diettrich)?

Issue 4 - Whether claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are enabled under 35 USC 112, first paragraph?

Issue 5 - Whether claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 and claim 96 are enabled under 35 USC 112, first paragraph?

7. The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein which applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue #1 - Whether claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are patentable under 35 USC §103(a) over "Premium Drivers of Post Deal Value" in Mergers and Acquisitions (hereinafter, Bielinski) in view of "Outdated corporate reporting practices fail to measure companies' true value" in M2 Presswire (hereinafter, M2) and further in view of "Finance and economics: shining a light on company accounts" in The Economist (hereinafter, Economist)?

In the February 11, 2008 Office Action for the above referenced application, claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are rejected under §103(a) as being obvious

given Bielinski in view of M2 and Economist. The Examiner has cited the Bielinski, M2 and Economist documents as references. The Appellant respectfully traverses the rejections for obviousness in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 11 February 2008 Office Action fails to establish a prima facie case that would support the rejection of a single claim for a number of reasons as detailed below.

Reason #1 - The first reason that the cited combination fails to establish a prima facie case of obviousness that claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are obvious is that the cited combination does not teach or suggest one or more limitation for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Limitations not taught or suggested by the cited combination include:

Claims 75 and 86. (also affects claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95). The cited combination of documents does not teach or suggest:

(a) developing a computational model of enterprise market value by element of value and segment of value by completing a series of multivariate analyses. In particular:

- None of the cited documents teach or suggest: developing a model of the real option segment of value contribution to enterprise market value and/or developing a model of the impact of real world elements of value on the value of real options,
- None of the cited documents teach or suggest: developing a model of the excess financial asset segment of value contribution to enterprise market value and/or developing a model of the impact of real world elements of value on the value of excess financial assets,
- None of the cited documents teach or suggest: developing a model of the market sentiment segment of value contribution to enterprise market value and/or developing a model of the impact of real world elements of value on the value of market sentiment (M2 does mention market sentiment),
- None of the cited documents teach or suggest: developing a model of the

current operation segment of value contribution to enterprise market value and/or developing a model of the impact of real world elements of value on the value of the current operation (Bielinski does teach an analysis of cash flow), and

- None of the cited documents teach or suggest: developing a model of the derivative segment of value contribution to enterprise market value and/or developing a model of the impact of real world elements of value on the value of derivatives (Economist does mention derivatives)

(b) quantifying an element of value impact on enterprise financial performance,

(c) determining an element of value contribution,

(d) optimizing one or more aspects of enterprise financial performance,

(e) preparing a plurality of transaction data related to a commercial enterprise for use in processing,

(f) calculating a real option discount rate,

(g) quantifying and/or optimizing a future enterprise market value (Bielinski teaches away as detailed under reason #2),

(h) valuing a real option,

(i) valuing an enterprise market sentiment,

(j) valuing a share of enterprise stock; and/or

(k) determining a target share price.

Claims 77 and 88. The cited combination does not teach or suggest: where an element of value is selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors, vendor relationships and combinations thereof.

Claims 78 and 89. The cited combination does not teach or suggest integrating data from a plurality of enterprise related systems in accordance with a common schema.

Claims 79 and 90. The cited combination does not teach or suggest optimizing aspects of financial performance selected from the group consisting of revenue, expense, capital change, real option value, derivative value, future market value and/or market sentiment value.

Claims 80 and 91. The cited combination does not teach or suggest where a series of

multivariate analyses are selected from the group consisting of identifying one or more previously unknown item performance indicators, discovering one or more previously unknown value drivers, identifying one or more previously unknown relationships between one or more value drivers, identifying one or more previously unknown relationships between one or more elements of value, quantifying one or more inter-relationships between value drivers, quantifying one or more impacts between elements of value, developing one or more composite variables, developing one or more vectors, developing one or more causal element impact summaries, identifying a best fit combination of predictive model algorithm and element impact summaries for modeling enterprise market value and each of the components of value, determining a net element of value impact for each segment of value, determining a relative strength of a plurality of elements of value between two or more enterprises, developing one or more real option discount rates, calculating one or more real option values, calculating an enterprise market sentiment value by element of value, and combinations thereof.

Claims 82 and 93. The cited combination does not teach or suggest wherein enterprise related transaction data are obtained from systems selected from the group consisting of advanced financial systems, basic financial systems, alliance management systems, brand management systems, customer relationship management systems, channel management systems, estimating systems, intellectual property management systems, process management systems, supply chain management systems, vendor management systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, web site systems, the Internet, external databases and combinations thereof.

Claims 83 and 94. The cited combination does not teach or suggest where an enterprise further comprises a single product, a group of products, a division or an entire company

Claims 84 and 95. The cited combination does not teach or suggest where a computational model of enterprise market value further comprises a combination of models selected from the group consisting of a predictive component of value model, a real option discount rate model, a real option valuation model, a derivative valuation model, an excess financial asset valuation model, a market sentiment model by element of value and combinations thereof.

Reason # 2 – The second reason that claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are patentable is that the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited documents teaching away from the claimed invention, alone or in combination, include:

1) Claims 75 and 86 summarize the development of a computational model of enterprise market value that includes a model of the contribution of the market sentiment segment of value to enterprise value. Bielinski teaches away from modeling and/or valuing the market sentiment segment of value as claimed by teaching the standard valuation model that excludes market sentiment and by teaching a tree based analysis of historical cash flow for modeling the value of the entire enterprise (see Evidence Appendix, pages 39 – 46).

2) Claims 75 and 86 summarize the development of a computational model of enterprise market value that includes a model of the contribution of the derivative segment of value to enterprise value. Economist teaches away from modeling and/or valuing the derivative segment of value as claimed by teaching the use of market value for evaluating derivatives (see Economist pages 1 - 2). It is well known to those of average skill in the art that market values are not available for many derivatives. Because of this, determining the value of all the derivatives that drive enterprise market value requires the use of a model such as the risk neutral valuation model used in the claimed invention.

3) Claims 75 and 86 summarize the development of a computational model of enterprise market value that includes a model of the contribution of the real option segment of value to enterprise value. As detailed in the specification (and as is well known) modeling the value of a real option segment of value requires the use of a projection of future financial performance. Bielinski teaches away from modeling and/or valuing the real option segment of value as claimed by teaching a strict reliance on historical cash flow and by teaching a tree based

analysis of historical cash flow for modeling the value of the entire enterprise (see Evidence Appendix, pages 39 - 46).

4) Claim 75 and claim 86 summarize the development of a computational model of enterprise market value that identifies the contribution of the elements of value to enterprise value by segment of value. As detailed in the specification, identifying the contribution of the elements of value to the current operation, derivative, excess financial asset and market sentiment segments of value requires the development of a summary of the value drivers for each element of value. Value drivers are defined in the specification as element of value indicators that are causal to changes in components of value (revenue, expense and capital change) and/or segments of value (i.e. derivative, excess financial asset and market sentiment). Bielinski teaches away from the value driver definition used in the specification by teaching that value drivers are high level summaries of enterprise financial performance like operating profit margin (see Evidence Appendix, page 43) and that operational value drivers are sub-components of expense value (raw material cost and/or production labor cost, see Table below), and/or summary financial statistics, sales growth and inventory turnover (see Evidence Appendix, page 45, particularly Table 2).

Aspect of financial performance	Per 10/743,616	Per Bielinski
Raw material cost	Sub-component of expense value	Operational value driver
Production labor cost	Sub-component of expense value	Operational value driver

5) Claim 75 and claim 86 summarize the development of a computational model of enterprise value that identifies the contribution to enterprise value of one or more elements value for each of two or more segments of value. In this model there are at least six ways to create value between one point in time and another point in time: increase the value of period cash flow, increase the value of derivatives, increase the value of elements of value, increase the value of excess financial assets, increase the value of market sentiment and increase the value of real options. Bielinski teaches away from the disclosed value creation model by teaching that there is one way to create value during a time period: increase the value of period cash flow (see Evidence Appendix, pages 42 – 46, particularly Table 1).

Value Creation per 10/743,616	Value creation per Bielinski
1. Increase value of period cash flow, 2. Increase value of derivatives, 3. Increase value of elements of value, 4. Increase value of financial assets, 5. Increase value of market sentiment & 6. Increase value of real options.	1. Increase value of period cash flow

As is well known to those of average skill in the art, changes in the value of derivatives, elements of value, financial assets, market sentiment and/or real options between one point in time are independent of changes in period cash flow and may be independent of changes in future cash flows.

6) Claims 75, claim 79, claim 86 and claim 90 summarize the use of a computational model of enterprise value to complete a variety of tasks including identifying changes to value drivers for one or more elements of value will optimize a future enterprise value. Bielinski teaches away from the claimed method for identifying changes to value drivers that will optimize a future enterprise value by: teaching away from the claimed value driver definition as discussed under item 4, by teaching away from the claimed value creation model as discussed under item 5, by teaching sensitivity and break even analysis in place of optimization analysis and by teaching away from the use of projections that are required for a future value optimization analysis (see Evidence Appendix, pages 42 – 46, particularly Table 2 and Table 3).

Reason # 3 – The third reason claim 64, claim 66, claim 67, claim 68, claim 69, claim 71, claim 72, claim 73, claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are patentable is the third reason listed under issue #2.

Reason #4 - The fourth reason claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 are patentable is that the February 11, 2008 Office Action for the above referenced application fails to explain the rationale for combining the teachings of the cited documents in an attempt to replicate the functionality of the claimed invention. *The Supreme Court in KSR noted*

that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).'" In spite of this well know requirement, the Office Action has not described the reason(s) for combining the document teachings and/or how the document teachings would be modified in an attempt to render the claimed inventions obvious. As detailed under reason #1 and reason #2, replicating the claimed functionality would require substantial modifications and additions to the teachings of all cited documents. The rationale and manner for making these modifications and/or additions has not been explained.

Reason #5 – The fifth way Appellant will respectfully traverse the §103(a) rejections of claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 is by noting that the assertions regarding the alleged obviousness of the claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In Dickinson v. Zurko, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that discussion in the preceding paragraphs clearly shows that the instant Office Action fails to provide even a scintilla of evidence to support the allegation that the claims are obvious and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the obviousness rejection of claim 75, claim 77, claim 78, claim 79, claim 80, claim 82, claim 83, claim 84, claim 86, claim 87, claim 88, claim 89, claim 90, claim 91, claim 93, claim 94 and claim 95 also fails to pass the arbitrary and capricious test because the evidence presented by the Examiner provides substantial evidence of novelty, non-obviousness and newness and of the rejected claims and because the U.S.P.T.O. has found the use of a model development technique similar to the one used in the rejected claims to be novel, non-obvious and new when incorporated in a patent application filing with a priority date two years after the priority date of the instant application (please see 7,283,982 comparison on page 13). The Appellant notes that there are still other ways in which these claim rejections can be shown to be arbitrary, capricious and discriminatory.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to

produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Issue 2 - Whether Claim 76 is patentable under 35 USC §103(a) over Bielinski, M2, Economist and "The use of options theory to value research in the service sector" by K. Jensen and P. Warren (hereinafter referred to as Jensen)?

In the February 11, 2008 Office Action for the above referenced application, claim 76 is rejected under §103(a) as being obvious given Bielinski in view of M2, Economist and Jensen. The Examiner has cited the Bielinski, M2, Economist and Jensen documents as references. The Appellant respectfully traverses the rejections for obviousness in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 11 February 2008 Office Action containing the claim rejections fails to establish a prima facie case of obviousness for every rejected claim for a number of reasons as detailed below.

Reason # 1 – The first reason that claim 76 is patentable is that the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited documents teaching away from the claimed invention, alone or in combination, include:

1) Claim 76 summarize the use of an enterprise model containing a real option segment of value where the real options are valued using a discount rate that is a function of the relative ranking of one or more enterprise elements of value. Bielinski teaches away from modeling and analyzing the real option segment of value as described previously under issue #1. M2 and Economist have no relevant teachings. Jensen teaches away by teaching compound options that rely on the old and well known practice of using volatility estimates derived from

stock market comparables in place of a discount rate that is a function of the relative ranking of one or more enterprise elements of value (Jensen, page 4),

2) Bielinski teaches away from the parent claim 75 as detailed under Issue 1, Reason #2, and

3) Economist teaches away from the parent claim 75 as detailed under Issue 1, Reason #2.

Reason #2 - The second reason that the cited combination fails to establish a prima facie case of obviousness that claim 76 is obvious is that the cited combination does not teach or suggest one or more limitation for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).* Limitations not taught or suggested by the cited combination include:

1) Claim 76. The cited combination of documents does not teach or suggest real options that are valued using a discount rate that is a function of the relative ranking of one or more enterprise elements of value. Jensen teaches away by teaching compound options (Jensen, Appendix) and by teaching reliance on the old and well known practice of using volatility estimates from stock market comparables as discussed previously. Bielinski also teaches away as discussed previously.

2) Bielinski, M2 and Economist do not teach or suggest one or more limitation for the parent claim 75 as detailed under Issue 1, Reason #1.

Reason # 3 – The third reason claim 76 is patentable is that the combination of teachings described in the cited combination would force a change the principle of operation of at least one of the inventions described in the cited documents. MPEP 2143.01 provides that when "*the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)*". Some of the changes in operating principle required to make the cited combination function are discussed below.

- Bielinski teaches and relies on the principle that the standard valuation model can be used to determine enterprise market value and that market sentiment does not exist. The claimed invention teaches that enterprise value is a function of a number of things including real option values and the value of market sentiment that are not part of the standard valuation model. Making a change to use a valuation creation model other

than the standard valuation model would require a change in the principle of operation of the Bielinski invention. Because a change in the principle of the operation of the Bielinski invention is required to enable the cited combination to replicate the functionality of the claimed invention, the teachings of the documents are not sufficient to render the claims prima facie obvious.

- Jensen teaches and relies on the principle that real options should be evaluated using compound options that are valued using volatility rates associated with publicly traded equities that are judged to be comparable. The claimed invention teaches the use of real options valued using a discount rate that is a function of the relative strength of the elements of value that support the option. Making a change to use real options valued using a discount rate that is a function of the relative strength of the elements of value would require a change in the principle of operation of the Jensen invention. Because a change in the principle of the operation of the Jensen invention is required to enable the cited combination to replicate the functionality of the claimed invention, the teachings of the documents are not sufficient to render the claims prima facie obvious.

Reason # 4 – The fourth reason claim 76 is patentable is the fourth reason listed under issue #1.

Reason # 5 – The fifth reason claim 76 is patentable is the fifth reason listed under issue #1.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Issue 3 - Whether claim 81, claim 85, claim 92 and claim 96 are patentable under 35 USC §103(a) over Bielinski, M2 and Economist in view of "Machine Learning Research – Four Current Directions" by Thomas Diettrich (hereinafter Diettrich)?

In the February 11, 2008 Office Action for the above referenced application, claim 81, claim 85, claim 92 and claim 96 are rejected under §103(a) as being obvious given Bielinski in view of M2, Economist and Diettrich. The Examiner has cited the Bielinski, M2, Economist and Diettrich documents as references. The Appellant respectfully traverses the rejections for obviousness in two ways. First, by noting that the rejections fail under both standards of the APA. Second, by noting that the argument used to support the claim rejections fails to establish a prima facie case of anticipation for the rejected claims. More specifically, the 11 February 2008 Office Action containing the claim rejections fails to establish a prima facie case that would support the rejection of a single claim for a number of reasons as detailed below.

Reason # 1 – The first reason that claim 81, claim 85, claim 92 and claim 96 are patentable is that the cited combination fails to establish a prima facie case of obviousness because it teaches away from a number of claimed methods. MPEP § 2141.02 states that: "*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious (Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983)).*" Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).* Examples of the cited documents teaching away from the claimed invention, alone or in combination, include:

1) Claim 81 and claim 92 summarize the use of specific algorithms to develop regression models (see table on page 13). Bielinski teaches away from the use of these algorithms by teaching reliance on a simple tree based analysis (see Evidence Appendix, pages 38 - 40). Diettrich teaches away by teaching the use of some of the same specific algorithms for classification instead of regression (Diettrich, pages 1 - 47) and by teaching ensembles of regression models in place of a single regression model (Diettrich, page 8),

2) Bielinski teaches away from the parent claims 75 and 86 as detailed under Issue 1, Reason #2, and

3) Economist teaches away from the parent claims 75 and 86 as detailed under Issue 1, Reason #2.

Reason #2 - The second reason that the cited combination fails to establish a prima facie case of obviousness that claim 81, claim 85, claim 92 and claim 96 are obvious is that the cited combination does not teach or suggest one or more limitation for every rejected claim. *MPEP 2143.03 provides that: to establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974))*. Limitations not taught or suggested by the cited combination include:

1) Claim 81 and claim 92. The cited combination of documents does not teach or suggest using the listed algorithms as part of a multi stage process for developing regression models. Diettrich and Bielinski teach away as discussed previously, and

2) Bielinski, M2 and Economist do not teach or suggest one or more limitation for the parent claims 75 and 86 as detailed under Issue 1, Reason #1.

Reason # 3 – The third reason claim 81, claim 85, claim 92 and claim 96 are patentable is the third reason listed under issue #2.

Reason # 4 – The fourth reason claim 81, claim 85, claim 92 and claim 96 are patentable is the fourth reason listed under issue #1.

Reason # 5 – The fifth reason claim 81, claim 85, claim 92 and claim 96 are patentable is the fifth reason listed under issue #1.

Summarizing the above, the Appellant respectfully submits that the Examiner has failed to produce the evidence required to establish a prima facie case of obviousness for a single claim. Taken together, these failures provide additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious.

Issue 4 - Whether claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are enabled under 35 USC 112, first paragraph?

In the February 11, 2008 Office Action for the above referenced application, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are rejected under §112 first paragraph as lacking an adequate written description. In particular the Examiner has stated that:

> *A complete explanation of all combinations for activity selection as cited in claim 1 are critical or essential to the practice of the invention, but not included in the claims is not enabled by the disclosure. See In re Mayhew, 527 F.2d 1229,188 USPQ 356 (CCPA I 976). As the claim is set forth as a Markush claim wherein the last element of group is "and combinations thereof", the written description must include a description of how the activities, if selected in any combination, would operate together…..for example, optimizing one or more aspects of enterprise financial performance and valuing a real option are selected. In the particular instance, the written description does not support the selection of only these two activities.*

The Appellant respectfully traverses the rejection of these claims for a lack of written description in four ways. First, by noting that the stated technical basis for the claim rejections is incorrect. Second, by noting that the stated statutory basis for the claim rejections is not valid. Third, by noting that the argument used to support the claim rejections fails to establish a prima facie case of a lack of written description for the rejected claims. Fourth, by noting that the claim rejections fail under both standards of the APA.

Reason # 1 – The first reason claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are patentable is that the stated technical

basis for the claim rejection is factually incorrect. In particular, the alleged problem with completing only the two identified activities simply does not exist. As shown in table 33 on page 65 of the specification, the base rate could be used to value a real option without completing any other tasks. In a similar manner, the patent incorporated by reference (5,615,109) describes a number of optimization methods that can be completed for a subset of the organization without the use of simulation or any of the other activities listed in the Markush Group. Since the two activities can be completed separately without performing any of the other activities, they can also be completed together without completing any of the other activities.

Furthermore, the way in which the combination of activities contained in the Markush Groups in claims 75 and 87 operate together is explained in the specification. The way the different activities operate together has also been outlined in the summary of claimed subject matter.

The other Markush claims discussed under this issue, namely claim 77, claim 79, claim 80, claim 82 and claim 84, do not contain activities so the stated technical basis for claim rejection does not apply to any of them.

The Appellant does not believe that the material from the cross-referenced patent application needs to be incorporated because it describes methods such as the simplex method that are well known in the art. However, if the Examiner feels that material from patent 5,615,109 is necessary for a complete understanding of the claimed invention by someone of average skill in the art, then the Appellant will only be too happy to prepare an amendment under 37 CFR 1.57 to add the necessary material and obviate these claim rejections.

Reason # 2 – The second reason claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are patentable is that the stated statutory basis for the claim rejection is incorrect. *In re Mayhew 527 F.2d 1229,188 USPQ 356 (CCPA I 976)* which is cited as the basis for the claim rejection in the February 11, 2008 Office Action relates to activities critical or essential to the practice of the invention. However, the activities listed in the Markush Groups in claims 75 and/or claim 87 are not critical or essential to the invention. The activities listed in these Markush Groups are activities that can be completed by the computational model of enterprise market value. Given these facts, there is no statutory basis for the claim rejections. Simply put, there is no statutory basis for a written description rejection for an alleged inability to complete non-essential activities alone or in combination.

For similar reasons, there is also no statutory basis for the rejection of the other Markush claims discussed under this issue, namely claim 77, claim 79, claim 80, claim 82 and claim 84 which

contain groups of non-essential limitations.

Reason #3 - The third reason that claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 are patentable is that the Examiner has failed to establish a prima facie case that the specification does meet the enablement requirements of §112 first paragraph. MPEP 2163 states that: *"A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., In re Marzocchi, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. Wertheim, 541 F.2d at 263, 191 USPQ at 97. In rejecting a claim, the examiner must set forth express findings of fact regarding the above analysis which support the lack of written description conclusion. These findings should:*

(A) Identify the claim limitation at issue; and

(B) Establish a prima facie case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of "unpredictability in the art" is not a sufficient reason to support a rejection for lack of adequate written description."

The Examiner has identified "combinations of essential activities" as the claim limitation at issue, however, a prima facie case has not been established. A prima facie case has not been established because no reasons have been presented why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed. As detailed under Reason #1 and Reason #2, instead of presenting evidence or sound reasoning that would support a claim rejection, the Examiner:

a) made an incorrect statement that the completion of a combination of activities was not supported;
b) made an incorrect assumption that the cited combination of activities was essential;
c) combined the incorrect statement with the incorrect assumption to justify a rejection for a lack of enablement; and
d) made an unwarranted assumption that the alleged problem described in item c) applied to all Markush claims.

In short, the evidence and reasoning presented in the Office Action does not support the

rejection of a single claim. The reasoning outlined above does add to the substantial evidence that those authoring the claim rejections lack the requisite skill in the art required to make meaningful statements in this regard.

Reason #4 – The fourth way Appellant will respectfully traverse the §112 first paragraph rejections of claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 is by noting that the assertions regarding the alleged lack of support for the claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In Dickinson v. Zurko, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that discussion in the preceding paragraphs (under Reason # 1 and Reason # 2) clearly shows that the instant Office Action fails to provide even a scintilla of evidence to support the allegation that the claims are not enabled and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the written description rejection of claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 87 also fails to pass the arbitrary and capricious test because there is no evidence of fact finding that can be rationally or irrationally connected to the claim rejections. As detailed under Reason #3, the rejections appear to rely almost entirely on a series of incorrect assumptions and there were no declarations from individuals with the level of skill in the art required to author a written description rejection included with the February 11, 2008 Office Action. The Appellant notes that there are still other ways in which these claim rejections can be shown to be arbitrary, capricious and discriminatory.

Issue 5 - Whether claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 and claim 96 are enabled under 35 USC 112, first paragraph?

In the February 11, 2008 Office Action for the above referenced application, claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 and claim 96 are rejected under §112 first paragraph as lacking an adequate written description. In particular the Examiner has stated that:

> *A complete explanation of all combinations for activity selection as cited in claim 1 are critical or essential to the practice of the invention, but not included in the claims is not enabled by the disclosure. See In re Mayhew, 527 F.2d 1229,188 USPQ 356 (CCPA I*

976). As the claim is set forth as a Markush claim wherein the last element of group is "and combinations thereof", the written description must include a description of how the activities, if selected in any combination, would operate together.

The Appellant respectfully traverses the rejection of these claims for a lack of written description in four ways. First, by noting that the stated technical basis for claim rejection does not apply to any of these claims. Second, by noting that the stated statutory basis for the claim rejections is not valid. Third, by noting that the argument used to support the claim rejections fails to establish a prima facie case of a lack of written description for the rejected claims. Fourth, by noting that the claim rejections fail under both standards of the APA.

Reason # 1 – The first reason claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 are patentable is that none of the rejected claims depends on a Markush claim and none of the Markush claims describe a combination of activities. In short, the stated technical basis for the claim rejections does not apply to any of these claims.

Reason # 2 – The second reason claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 are patentable is that the stated statutory basis for the claim rejection is incorrect. *In re Mayhew 527 F.2d 1229,188 USPQ 356 (CCPA I 976)* which is cited as the basis for the claim rejection in the Office Action relates generally to activities critical or essential to the practice of the invention. However, the Markush claims discussed under this issue, namely claim 88, claim 90, claim 91, claim 93 and claim 95 contain groups of non-essential limitations.

Reason #3 - The third reason that claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 and claim 96 are patentable is that the Examiner has failed to establish a prima facie case that the specification does meet the enablement requirements of §112 first paragraph. MPEP 2163 states that: *"A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., In re Marzocchi, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. Wertheim, 541 F.2d at 263, 191 USPQ at 97. In rejecting a claim, the examiner must set forth express findings of fact regarding the above analysis which support the lack of written description conclusion. These findings should:*

(A) Identify the claim limitation at issue; and

(B) Establish a prima facie case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of "unpredictability in the art" is not a sufficient reason to support a rejection for lack of adequate written description."

The Examiner has identified "combinations of essential activities" as the claim limitation at issue, however, a prima facie case has not been established. A prima facie case has not been established because no reasons have presented why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed. As detailed under Issue 4, Reason #1, Issue 4, Reason #2 and Issue 4, Reason #3, instead of presenting evidence or a solid argument that would support a claim rejection, the Examiner:

a) made an incorrect statement that the completion of a combination of activities was not supported;
b) made an incorrect assumption that the cited combination of activities was essential;
c) combined the incorrect statement with the incorrect assumption to justify a rejection for a lack of enablement; and
d) made an unwarranted assumption that the alleged problem described in item c) applied to all Markush claims.

In short, the evidence and reasoning presented in the Office Action does not support the rejection of a single claim.

Reason #4 – The fourth way Appellant will respectfully traverse the §112 first paragraph rejections of, claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 will be by noting that the assertions regarding the alleged lack of support for the claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In Dickinson v. Zurko, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that discussion in the preceding paragraphs (under Reason # 1 and Reason # 2) clearly shows that the instant Office Action fails to provide even a scintilla of evidence to support the allegation that the claims are not enabled and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the written

description rejection of claim 86, claim 88, claim 89, claim 90, claim 91, claim 92, claim 93, claim 94, claim 95 also fails to pass the arbitrary and capricious test because there is no evidence of fact finding that can be rationally or irrationally connected to the claim rejections. As detailed under Reason #3, the rejections appear to rely almost entirely on a series of incorrect assumptions. This may be because there were no declarations from individuals with the level of skill in the art required to author a written description rejection included with the February 11, 2008 Office Action. The Appellant notes that there are still other ways in which these claim rejections can be shown to be arbitrary, capricious and discriminatory.

8. Conclusion

As detailed above, the evidence used to support the art rejections provides additional evidence that the claimed invention for producing concrete, tangible and useful results is new, novel and non-obvious. The "reasoning" used to support the non-art rejections provides additional evidence that those authoring the claim rejections may lack the requisite skill in the art required to make meaningful statements in this regard.

For the extensive reasons advanced above, Appellant respectfully but forcefully contends that each claim is patentable. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,
Asset Trust, Inc.

/B.J. Bennett/

B.J. Bennett, President
Dated: December 5, 2008

9. Claims Appendix

75. A program storage device readable by a computer, tangibly embodying a program of instructions executable by at least one computer to perform an enterprise management method, comprising:

preparing a plurality of transaction data related to a commercial enterprise for use in processing, developing a computational model of enterprise market value by element of value and segment of value by completing a series of multivariate analyses that utilize at least a portion of said data,

and

completing activities selected from the group consisting of: determining an element of value contribution, quantifying an element of value impact on enterprise financial performance, completing an analysis of enterprise financial performance, optimizing one or more aspects of enterprise financial performance, simulating an enterprise financial performance, optimizing a future enterprise market value, quantifying a future enterprise market value, creating a management report, valuing an enterprise market sentiment, calculating a real option discount rate, valuing a real option, valuing a share of enterprise stock, determining a target share price and combinations thereof

where a segment of value further comprises a current operation, a derivative segment and a segment of value selected from the group consisting of market sentiment, real option, excess financial asset and combinations thereof.

76. The program storage device of claim 75 where a real option segment of value is valued using a discount rate that is a function of the relative ranking of one or more enterprise elements of value.

77. The program storage device of claim 75 where the elements of value are selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors, vendor relationships and combinations thereof.

78. The program storage device of claim 75 where preparing data for use in processing further comprises integrating data from a plurality of enterprise related systems in accordance with a common schema.

79. The program storage device of claim 75 where optimizing one or more aspects of enterprise financial performance further comprises identifying one or more value driver changes that will optimize of one or more aspects of financial performance where said aspects of financial performance are selected from the group consisting of revenue, expense, capital change, cash flow, current operation value, real option value, derivative value, future market value, market sentiment value, market value and combinations thereof.

80. The program storage device of claim 75 wherein a series of multivariate analyses are selected from the group consisting of identifying one or more previously unknown item performance indicators, discovering one or more previously unknown value drivers, identifying one or more previously unknown relationships between one or more value drivers, identifying one or more previously unknown relationships between one or more elements of value, quantifying one or more inter-relationships between value drivers, quantifying one or more impacts between elements of value, developing one or more composite variables, developing one or more vectors, developing one or more causal element impact summaries, identifying a best fit combination of predictive model algorithm and element impact summaries for modeling enterprise market value and each of the components of value, determining a net element of value impact for each segment of value, determining a relative strength of a plurality of elements of value between two or more enterprises, developing one or more real option discount rates, calculating one or more real option values, calculating an enterprise market sentiment value by element of value, and combinations thereof.

81. The program storage device of claim 80 wherein a predictive model algorithm is selected from the group consisting of neural network; classification and regression tree; generalized autoregressive conditional heteroskedasticity, regression; generalized additive; redundant regression network; rough-set analysis; Bayesian; multivariate adaptive regression spline and support vector method.

82. The program storage device of claim 75 wherein enterprise related transaction data are obtained from systems selected from the group consisting of advanced financial systems, basic financial systems, alliance management systems, brand management systems, customer relationship management systems, channel management systems, estimating systems, intellectual property management systems, process management systems, supply chain

management systems, vendor management systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, web site systems, the Internet, external databases and combinations thereof.

83. The program storage device of claim 75 wherein an enterprise further comprises a single product, a group of products, a division or an entire company.

84. The program storage device of claim 75 wherein a computational model of enterprise market value further comprises a combination of models selected from the group consisting of a predictive component of value model, a real option discount rate model, a real option valuation model, a derivative valuation model, an excess financial asset valuation model, a market sentiment model by element of value and combinations thereof.

85. The program storage device of claim 75 where a Markov Chain Monte Carlo model is used to identify one or more changes that will optimize one aspect of enterprise financial performance, genetic algorithms are used to identify changes that will optimize one or more aspects of enterprise financial performance and multi-criteria optimization models are used to identify the changes that will optimize two or more aspects of enterprise financial performance.

86. An enterprise management apparatus, comprising:

a plurality of enterprise related systems,

means for preparing data from said systems for use in processing, and

means for developing a computational model of enterprise market value by element of value and segment of value

where a segment of value further comprises a current operation, a market sentiment segment and a segment of value selected from the group consisting of real option, derivative, excess financial asset and combinations thereof.

87. The apparatus of claim 86, that is useful for completing activities selected from the group consisting of: determining an element of value contribution, quantifying an element of value impact on enterprise financial performance, completing an analysis of enterprise financial performance, optimizing one or more aspects of enterprise financial performance, simulating an

enterprise financial performance, optimizing a future enterprise market value, quantifying a future enterprise market value, creating a management report, valuing an enterprise market sentiment, calculating a real option discount rate, valuing a real option, valuing a share of enterprise stock, determining a target share price and combinations thereof.

88. The apparatus of claim 86 where an element of value is selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors, vendor relationships and combinations thereof.

89. The apparatus of claim 86 where preparing data for use in processing further comprises integrating and converting data from a plurality of enterprise related systems in accordance with a common schema.

90. The apparatus of claim 86 where optimizing one or more aspects of enterprise financial performance further comprises identifying value driver changes that will optimize of one or more aspects of financial performance where said aspects of financial performance are selected from the group consisting of revenue, expense, capital change, cash flow, current operation value, real option value, derivative value, future market value, market sentiment value, market value and combinations thereof.

91. The apparatus of claim 86 wherein developing a computational model of enterprise market value by element and segment of value further comprises completing a series of multivariate analyses that are selected from the group consisting of identifying one or more previously unknown item performance indicators, discovering one or more previously unknown value drivers, identifying one or more previously unknown relationships between one or more value drivers, identifying one or more previously unknown relationships between one or more elements of value, quantifying one or more inter-relationships between value drivers, quantifying one or more impacts between elements of value, developing one or more composite variables, developing one or more vectors, developing one or more causal element impact summaries, identifying a best fit combination of predictive model algorithm and element impact summaries for modeling enterprise market value and each of the components of value, determining a net element of value impact for each segment of value, determining a relative strength of a plurality of elements of value between two or more enterprises, developing one or more real option

discount rates, calculating one or more real option values, calculating an enterprise market sentiment value by element of value, and combinations thereof.

92. The apparatus of claim 91 wherein a predictive model algorithm is selected from the group consisting of neural network; classification and regression tree; generalized autoregressive conditional heteroskedasticity, regression; generalized additive; redundant regression network; rough-set analysis; Bayesian; multivariate adaptive regression spline and support vector method.

93. The apparatus of claim 86 wherein a plurality of related systems are selected from the group consisting of advanced financial systems, basic financial systems, alliance management systems, brand management systems, customer relationship management systems, channel management systems, estimating systems, intellectual property management systems, process management systems, supply chain management systems, vendor management systems, operation management systems, sales management systems, human resource systems, accounts receivable systems, accounts payable systems, capital asset systems, inventory systems, invoicing systems, payroll systems, purchasing systems, web site systems, the Internet, external databases and combinations thereof.

94. The apparatus of claim 86 wherein an enterprise further comprises a single product, a group of products, a division or an entire company.

95. The apparatus of claim 86 wherein a computational model of enterprise market value further comprises a combination of models selected from the group consisting of a predictive component of value model, a real option discount rate model, a real option valuation model, a derivative valuation model, an excess financial asset valuation model, a market sentiment model by element of value and combinations thereof.

96. The apparatus of claim 86 where a Markov Chain Monte Carlo model is used to identify one or more changes that will optimize one aspect of enterprise financial performance, genetic algorithms are used to identify changes that will optimize one or more aspects of enterprise financial performance and multi-criteria optimization models are used to identify the changes that will optimize two or more aspects of enterprise financial performance.

10. Evidence Appendix

Pages 39 – 41	declaration under rule 132, received November 5, 2007
Pages 42 – 46	Bielinski article

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. :	10/743,616
Applicant :	Jeff S. Eder
Filed :	22 December 2003
Art Unit :;	3692
Examiner :	Jennifer Liversedge
Docket No. :	AR - 61
Customer No. :	53787

DECLARATION UNDER RULE 132

I, Dr. Peter Brous, do hereby declare and say:

My home address is 17221 NE 8th Street, Bellevue, WA 98008. I have a B.S. degree in Finance from the University of Connecticut and a PhD in Finance from the University of Oregon.

I have worked in the finance field for 25 years, concentrating in the areas of corporate performance measures, business valuation, capital budgeting, and real option analysis. I have been a professor of finance at Albers School of Business and Economics at Seattle University for 15 years and was recently honored to hold the Dr. Khalil Dibee Endowed Chair.

I further declare that I do not have any direct affiliation with the application owner, Asset Reliance, Inc or its licensee Knacta, Inc. I met the inventor, the President of Knacta, Inc.,

for the first time on October 16, 2007. I understand that Knacta, Inc. has a license to the intellectual property associated with this application. I have had extremeley brief discussion of this patent application and the article cited below with the inventor.

On October 25, 2007 I was given a copy of "How to sort out the premium drivers of post deal value", by Daniel Bielinski published in Mergers and Acquisitions in July of 1993. Until that time I had not read the article. However, I have read many articles on the subject of Value Based Management. I have a strong understanding of the concept and practice of Value Based Management and have been teaching this concept for over 10 years. I have studied the entire article and I am totally familiar with the language of the article with the scope thereof.

Based on my experience and education in the field of finance, I have concluded that the the Bielinski article and Value Based Management does not inherently describe or enable: the development of a computational model of enterprise market value by element of value and segment of value where the elements of value are selected from the group consisting of alliances, brands, channels, customers, customer relationships, employees, employee relationships, intellectual capital, intellectual property, partnerships, processes, production equipment, vendors and vendor relationships and the segments of value are selected from the group consisting of market sentiment, real option, derivative, excess financial asset.

There are several reasons for this:

1. As stated in the article VBM is similar to SVA. One of the ways it is similar is that it focuses on "value drivers" such as profit margin and growth instead of intangible assets as part of a tree based analysis of cash flow. Unlike SVA, VBM includes operational value drivers that drive the value drivers. However, these are generally not intangible elements of value. For example, Bielinski provides an example of breaking down profit margin by looking more closely at the cost of materials;

2. VBM is also similar to SVA in that it relies on the efficient market theory and this precludes the analysis of market sentiment;

3. SVA and VBM are tools that focus on the standard valuation model, a discounted cash flow model, that does not even consider the value associated with flexibility or decision making that is done sequentially and conditionally based on the arrival of new information. The valuation of this flexibility is the basis for valuation using real option analysis; and

4. Neither VBM or SVA address the valuation of derivatives.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed,

Dr. Peter Brous
Date: 10/31/2007

How to Sort Out The Premium Drivers Of Post-Deal Value

Daniel W. Bielinski

The Value-Based Management model uses a target's past performance to help select the most rewarding future changes.

Many m&a professionals use a variety of computerized models to estimate the value of a company and guide them in setting purchase prices. However, relatively few buyers take advantage of the capabilities of these models to enhance their due diligence and formulate strategies for increasing the cash flow and enhancing the value of their acquired targets. Even fewer sellers use these models to help maximize the cash flows and values of their companies before putting their firms up for sale. Utilizing valuation tools solely to price companies is not unlike using a Ferrari to drive only to and from work — a legitimate but limited use that ignores powerful potential. Indeed, as the art of modeling has progressed, new methodologies have been developed and applied to actual transactions in the m&a market to sharply widen the utility and versatility of computer-based valuation approaches.

One particularly appealing advancement is Value-Based Management (VBM), which keys on a target's historical operations rather than future projections. VBM also can calculate the results of trade-offs when decisionmakers must choose between a series of factors that can be changed to enhance postacquisition value.

Probably the best-known valuation tool designed to facilitate value creation and cash flow enhancement is

Daniel W. Bielinski *is a manager in the Enterprise and Valuation Groups of Arthur Andersen & Co. in Milwaukee.* *He acknowledges the contribution to this article by Joseph R. Boehmer, a senior partner in Arthur Andersen's Enterprise Group in Milwaukee.*

KEYS TO CREATING VALUE

Value-Based Management (VBM) represents one of the latest advancements in Discounted Cash Flow (DCF) modeling that is available to acquirers. VBM centers on what specific steps can be taken operationally and strategically to add value to a target after the deal is signed. It is based on the target's historical performance, rather than projections, and can show how the record might have been changed had managerial decisions and operating environments been different.

Sensitivity analysis of past results offers clues to what can be done in the future and which value drivers — e.g., sales growth, profit margins, productivity, etc. — should receive the most attention to achieve the optimal rewards.

Additionally, the VBM technique allows the analyst to figure key decisionmaking trade-offs, since attention to one driver may generate negative effects on others or two or more drivers may have to be varied in concert to produce the best results.

Shareholder Value Analysis (SVA), introduced in the 1980s by Prof. Alfred Rappaport of Northwestern University. SVA may be defined as a two-step process. First, a discounted cash flow business valuation is performed. A projection of future cash flow (including a residual) is developed and discounted at an appropriate rate, usually the cost of capital, to arrive at an indicated value. Second, key factors (or value drivers), such as growth, profit margins, etc., are varied systematically to test the sensitivity of the indicated business value to each driver. Standard SVA sensitivity analysis changes each value driver plus or minus 1%, although analysts now often use "relevant ranges" and different percentages for upside and downside swings to reflect prevailing business realities.

SVA is a useful methodology, but, as with any tool, it has limitations. In working with middle-market companies, we have found that these limitations often are magnified into constraints that necessitate modifying standard SVA analysis. VBM, a first cousin to SVA, has resulted from these modifications and already has helped a number of middle-market companies improve their cash flows and values. The same techniques should prove useful to larger companies as well.

This article provides an abbreviated overview of VBM, describes how it differs from the traditional SVA framework, provides a simplified example, and discusses several applications in the m&a arena.

Although SVA has been in use for more than a decade, many executives still are leery of recommendations based on models that utilize projections, particularly when significant changes are suggested. Their argument is that when it's hard to predict results in the next quarter, how prudent is it to change a company's strategic direction based on a five-year projection?

Rather than use projections of future cash flow like SVA, the VBM framework utilizes historical cash flow. Five years of historical cash flow are added up to arrive at a cumulative baseline cash flow number. That is in contrast to SVA's method of discounting future cash flows to reach an indicated value.

Instead of testing the sensitivity of a value based on a projection, VBM tests the sensitivity of the historical cash flow. VBM tells the executive how much more or less cash flow would be in the bank today if certain events had occurred differently or if the company had operated differently in the past five years.

The use of actual historical data, rather than projections, has proven useful in testing the impact of alternative scenarios against the reality of actual events. It also has served as a catalyst to identify and implement actions that generate improvements. As long as a company's fundamental structure does not change going forward, the results provide meaningful insight regarding the probable outcomes of future strategic action. To the extent that risk is not increased, an executive may reasonably assume that an increase from historical cash flow trends likely would translate into enhanced value.

In the minds of some executives, particularly those with operations backgrounds, the traditional SVA "value drivers" are too far removed from daily operations to be relevant for short-term or medium-term planning. Therefore, VBM utilizes drivers that are more directly linked to operations. For example, rather than use operating profit margin as a broad value driver, a VBM analysis on a manufacturer would include a breakdown of cost of goods sold by key components. A probable mix would include:

- Materials — The cost of raw materials and purchased components used in production, net of scrap sales.

Many strategic decisions involve trade-offs, resulting in two or more value drivers changing simultaneously.

■ Human Resources — All direct and indirect labor costs, fully loaded with all benefits — regardless of where the accountants might classify them, i.e., in "General and Administrative" expense — to get a true picture of manufacturing labor cost.
■ Technology/Capital — All costs associated with running and maintaining the manufacturing facilities and equipment (rent, depreciation, etc.) and R&D.
■ Other Cost of Goods Sold — Such as utilities, etc.

Compartmentalizing the costs allows managers to link strategy with pure day-to-day operating factors, such as scrap rates, procurement procedures, pricing policies, etc. Much has been written about "linking" manufacturing operations to strategy as a means of establishing competitive advantage. VBM facilitates this process.

Traditional SVA assesses changes in one value driver at a time. But many strategic decisions involve trade-offs, resulting in two or more value drivers changing simultaneously. The pressure on decisionmakers in those situations often is to concentrate change in the drivers that are assumed to offer the greatest enhancements in overall business value, even if such a focus in actuality works to the detriment of cash flow and value.

For example, a company might pursue lower-margin commodity business in order to grow by expanding the top line. Executives will be trading off profit margin for growth. But that's just for openers. A higher-growth game plan could necessitate increased capital expenditures — to improve efficiency, increase production, or boost productivity — so these additional costs must be incorporated in the decision. Since the net effect of such trade-offs cannot be gleaned by simply "netting" the results of single-variable sensitivities, a model that can sort out concurrent changes in several value drivers can provide crucial information for an intelligent decision based on all relevant factors.

In the final analysis, VBM essentially utilizes SVA principles but advances the basic techniques by incorporat-

Table 1: Operating Cash Flow Statement

	1987	1988	1989	1990	1991
Sales	7,300,000	7,000,000	7,900,000	8,200,000	9,000,000
Material Cost	2,000,000	1,600,000	1,900,000	2,000,000	2,300,000
Value-Added by Manufacturing	**5,300,000**	**5,400,000**	**6,000,000**	**6,200,000**	**6,700,000**
Human Resources	2,500,000	2,600,000	2,700,000	2,700,000	3,000,000
Technology/Capital Cost	400,000	600,000	650,000	780,000	800,000
Other Cost of Sales	250,000	225,000	240,000	210,000	260,000
Gross Margin	**2,150,000**	**1,975,000**	**2,410,000**	**2,510,000**	**2,640,000**
S,G & A Cost	1,600,000	1,700,000	2,100,000	2,200,000	2,400,000
Other Income/<Expense>	(14,000)	(6,000)	(25,000)	(10,000)	(40,000)
Operating Income	**536,000**	**269,000**	**285,000**	**300,000**	**200,000**
Cash Income Taxes	60,000	25,000	25,000	15,000	20,000
Operating Net Income	**476,000**	**244,000**	**260,000**	**285,000**	**180,000**
Depreciation	250,000	300,000	375,000	350,000	400,000
Simple Cash Flow	**726,000**	**544,000**	**635,000**	**635,000**	**580,000**
Change in NWC (Detail not Shown)	(56,000)	200,000	(467,000)	293,000	1,000
Capital Expenditures	400,000	200,000	550,000	450,000	375,000
Operating Net Cash Flow	**382,000**	**144,000**	**552,000**	**(108,000)**	**204,000**
Total Cumulative Cash Flow:	**$1,174,000**				

ing historical data, operations-linked value drivers, and concurrent changes in multiple value-drivers. So how does a VBM analysis look?

Table 1 shows a reconstructed historical operating cash flow statement for an actual company, using disguised data. As with traditional SVA, operating cash flows, which exclude interest expense and debt changes, are measured. Note the operations breakout — showing that fully loaded labor is the largest single cost, materials is second, and other costs are relatively small contributors — to determine the cost of goods sold. The ability to partition manufacturing costs in this manner is important to strategic decisionmaking. For example, while fully loaded human resources cost is about 33% of sales in Table 1, direct labor costs for the company were only 7%. This insight alone was an eye-opener for management.

Table 2: Key Factor Cash Flow Sensitivity*

Cash Flow/Value Driver	Sensitivity Range	Cumulative Historical Cash Flow—% Change
Sales Growth %	+5%	+84%
	-5%	-76%
Raw Material Cost	-5%	+25%
(% reduction in material cost)	+5%	-25%
Production Human Resources	-1%	+7%
(% reduction in HR cost)	+10%	-70%
Inventory Turnover	+1 Turn	+1%
	-1 Turn	-1%

**Partial listing of value drivers.*

The bottom-line operating cash flows for the five-year span are added up to produce a "total cumulative cash flow" of $1,174,000. This represents a baseline cash flow number that can be used in conjunction with sensitivity analysis to determine exactly what factors really "drive" the company's cash flow and value.

Table 2 shows the sensitivity of the baseline cash flow to changes in key factors. In other words, it demonstrates how the results might have turned out differently had operating or strategic changes been effected in the recent past. In turn, this suggests improvements that can be made in the future.

For example, a 5% annual increase in sales, while holding relative cost relationships constant, would have dramatically expanded cash flow by 84%. But such growth may be far more difficult to achieve than improving the productivity of operations. Thus, the sensitivity analysis also shows how changes in key cost and operating components can impact cash flow.

By comparing Tables 1 and 2, the analyst can determine which drivers can, if altered, impact cash flow the most. One striking conclusion is that the areas "where the big dollars are" do not always offer the greatest opportunities to improve cash flow and value. At our example company, Table 1 has established, human resources represent the largest component of cost of goods sold, suggesting that it is a labor-intensive operation.

Working on fully loaded labor costs would not be unproductive. For a 1% cut, cumulative cash flow will expand by 7%. Moreover, the consequences of not controlling labor costs are dire, since the same 7-to-1 ratio works in reverse as a 10% rise in human resources costs chops cumulative cash flow by 70%. But the cash flow harvest is not as rich as in curbing material costs, where a 5% reduction will expand cumulative cash flow by 25%. Further, efforts to cut material costs often require less energy than an attack on labor costs, because many firms have tried to bleed every last dollar out of labor cost while ignoring material cost drivers like scrap and procurement.

With these data in hand, strategic changes now may be tied directly to manufacturing. Initiatives to control material costs, for example, might include standardizing parts across a number of product lines, using alternative materials or parts that are either lower cost/equal quality or higher unit cost/lower total cost through reduced scrap, eliminating overspecification on parts orders to vendors, and establishing better value chain management through closer relationships with suppliers. Reducing scrap or increasing growth may now be related directly to reducing setup times, streamlining the factory, shortening production runs, increasing manufacturing flexibility, and other factory-floor initiatives that impact costs, pricing, and competitive advantage.

Table 3 presents certain "break-even trade-offs," or how changes in two value drivers can offset each other and leave the baseline cash flow unchanged. Strategies can be evaluated in light of these trade-offs.

Using historical data has proven useful in testing the impact of alternative scenarios against the reality of actual events.

Complex modeling, varying three or more value drivers concurrently, is also possible. For example, our company in Table 1 may mount a strategy to enhance sales growth 5% a year by pursuing lower-margin business. Reaching the sales goal requires cutting gross mar-

gin 2%, stocking more product in inventory — thereby reducing turnover by two turns — and channeling an additional $50,000 a year into capital outlays. Unless there is an overwhelming competitive reason for a pure sales-growth strategy, the approach is self-defeating from a value standpoint. It would reduce historical cumulative cash flow by about 10%.

The Table 1 example utilized a manufacturer. While the value drivers used for, say, a distributor would be different, the same sorts of linkages to operations can be developed.

This framework offers multiple applications for corporate acquirers. Prior to an acquisition, the VBM model can help identify hidden potential for quick cash flow generation — which is especially important for dealmakers in leveraged transactions. VBM has been used with great effectiveness in the due diligence process to evaluate risk. And postacquisition strategy formulation for the target also may include a VBM analysis.

Before making an acquisition, a company can derive great benefit from a VBM-based self-evaluation designed to identify strengths and weaknesses of its existing operations and strategies. It is a sad fact that many companies undertake acquisitions in an attempt to fix internal problems that they have not effectively addressed on their own. Invariably, they aggravate the problems by repeating the same mistakes on the targets they acquire and making both worse.

At a minimum, a VBM analysis might reveal upside potential a buyer could "acquire into," or downside risk that could be diversified away through acquisition. For example, a company that faces high downside risk if its growth slows might acquire a slow-growth, stable company to reduce the damage should the combined company not hit its growth targets.

A related but much broader issue critical to both corporate acquirers and dealmakers involves the design of incentive compensation plans. Traditional incentive plans tend to be tied to accounting-based earnings measures that may not be the best gauges of value change. More recently, incentive plans tied to cash flow, the same basic yardstick used to measure value, have grown in popularity. However, there are two major difficulties in implementing a value-based incentive compensation plan — it uses a projection that is generated by management, which means that it may be perceived by plan participants as self-serving, and there are problems in tying incentive plans to operations.

VBM addresses both of these concerns and offers the advantage of focusing on increments to value, rather than a single value for a company. The benefits of an incentive compensation plan for target management that is tied to value creation are compelling for the acquirer who is anxious to reap the greatest payoff from the combined organization.

On the other side, a potential seller can use VBM to "dress up" the business from a valuation standpoint before putting the company in play. Preferably, enhancement efforts should start three to five years prior to sale. This is especially important in the current m&a market where the seller gets paid more for demonstrated results than for great potential.

Further, some potential sellers are looking to "get out from under" problems that seem unsolvable. VBM can be used to help get a handle on the company's performance and identify areas that can be improved under the present ownership. The exercise may lead the seller to conclude that the resulting cash flow and value benefits make the company worth keeping.

Table 3: Break-Even Key Factor Trade-Offs*

Sales Growth %	Gross Profit %	Cumulative Historical Cash Flow–% Change
+1.00%	-0.50%	~0.00%
+3.00%	-1.50%	~0.00%
+5.00%	-2.50%	~0.00%
-5.00%	+3.00%	~0.00%
-3.00%	+1.75%	~0.00%
-1.00%	+0.50%	~0.00%

Partial listing

VBM also can be used to add credibility to a seller's projection of sales, earnings, and cash flows. A projection that has the same sensitivity profile as the historical performance enjoys greater believability. If projected cash flow improvements are similar in magnitude to improvements that could have been achieved historically, the forecast is more readily accepted by the buyer. And if both the acquirer and target utilize VBM in constructing a projection, the two sides might come close to reaching a consensus on what constitutes a "realistic" projection of future performance.

The valuation concepts and models that are so critical to effective pricing of companies enjoy much wider versatility than their most common uses. They can be sensibly employed to evaluate other key factors such as risk assessment and ongoing value creation that can make the difference between a success or a failure in an acquisition. They offer potential buyers and sellers powerful tools that might give them a competitive edge in the m&a arena. ■

11. Related Proceedings Appendix: 09/761,671 – opinion appears to be based largely on an assumption that VBM is different than SVA in a number of areas where they are in fact the same (see pages 38 – 40, Evidence Appendix). Opinion also appears to contain a number of clear errors because:

1) The cited combination failed to teach one or more limitation for every claim.

2) The cited documents failed to make the invention as a whole obvious by teaching away from the claimed methods. Bielinski teaches: efficient market in place of an inefficient market, a tree based analysis in place of a network analysis and three determinants of market value (cash flow, cash flow risk and growth) in place of the elements of value as determinants of value. Brown teaches: scoring in place of regression and 40 external factors determine market value in place of elements of value as determinants of value.

3) Modifying the cited documents to replicate the claimed functionality would require changes in the principles of operation for the cited inventions and destroy their ability to function. Bielinski would have to change from a tree to a network and it is well known that substituting a neural network squashing function in place of the tree node would destroy its ability to function. Brown would have to change to using elements of value as determinants of value and use regression in place of scoring.

4) The cited documents teach away from their own combination. Bielinski specifically prohibits the use of projections while the cited portion of Brown teaches a method with only one function: projecting changes in stock prices.

5) Bielinski specifically states that the disclosed VBM method follows the principles of Shareholder Value Analysis (SVA). One of the well known principles of SVA is the efficient market theory. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the efficient market theory.

6) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is the tree based analysis of cash flow. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the tree based analysis of cash flow.

7) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is that there are 3 determinants of market value. In spite of these facts, the BPAI said there was no evidence that Bielinski taught that there were 3 determinants of market value.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY SCOTT EDER

Appeal 2007-2745
Application 09/761,671
Technology Center 3600

Decided: August 29, 2007

Before TERRY J. OWENS, HUBERT C. LORIN, and ANTON W. FETTING, *Administrative Patent Judges.*

FETTING, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Jeffrey Scott Eder (Appellant) seeks review under 35 U.S.C. § 134 of a Final rejection of claims 69-103, the only claims pending in the application on appeal.

We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6.

We AFFIRM.